Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:

AFSC/MML: Acoustics short-term passive monitoring using sonobuoys in the Gulf of Alaska, Bering, Chukchi, and Western Beaufort Seas, Summer 2007-2018

1.2. Summary description of the data:

The Marine Mammal Laboratory (MML) has conducted passive acoustic monitoring in the Gulf of Alaska, Bering, Chukchi, and Western Beaufort Seas to determine spatio-temporal distribution of marine mammals as well as environmental and anthropogenic noise. Species and sounds detected on sonobuoys include fin, blue, bowhead, humpback, killer, gray, minke, sperm, beluga, sei, and North Pacific right whales, walrus, ribbon and bearded seals, fish, and seismic airguns. This short-term passive acoustic monitoring was also used to locate vocalizing species of interest for photo-identification, tagging, and behavioral studies. Recordings are available since 2007 in the Bering Sea, since 2010 in the Chukchi and Beaufort Seas, and in 2013 and 2015 in the Gulf of Alaska. Both omnidirectional and DiFAR sonobuoys have been used. In one year (2009), sonobuoys were deployed opportunistically from an aerial survey plane. All sonobuoys were provided by the United States Navy (Naval Operational Logistics Support Center, Naval Surface Warfare Center, Crane Division, and the Office of the Assistant Secretary of the Navy).

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2007 to 2014

1.5. Actual or planned geographic coverage of the data:

W: 170.3, E: -149.5, N: 73.5, S: 53.5
Gulf of Alaska, Bering, Chukchi, and Western Beaufort Seas

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Table (digital)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)
Instrument: Sonobuoy
Platform: Drifting
Physical Collection / Fishing Gear: NA

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
Metadata Coordinators MC

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:
AFSC.metadata@noaa.gov

2.5. Phone number:

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:
Catherine Berchok

3.2. Title:
Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?
No

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):
0

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Lineage Statement:

A sonobuoy is a free-floating, expendable, short-term passive acoustic listening device that transmits signals in real time via VHF radio waves to a receiver on a vessel or aircraft. The hydrophone is suspended down from the surface float at a programmable depth. For the majority of deployments, modifications were made by tying or taping sections of the sonobuoy housing to prevent the main wire spool from deploying; the resulting deployment depth was then 24 m. Additional modifications involved replacement of the display battery. Three types of sonobuoys were used: omnidirectional only, DiFAR only, and programmable DiFAR/Omnidirectional. DiFAR (Directional Frequency Analysis and Recording) capable sonobuoys transmit signal bearing information along with the acoustic signal. If two or more DiFAR sonobuoys are deployed, cross-fixes can be obtained on a calling animal to determine its location. When in DiFAR mode, the maximum frequency is limited to 2.5 kHz; the omni-directional sonobuoys were deployed occasionally in omnidirectional mode to achieve full bandwidth when bearing information was not needed. The methods that follow apply from 2009 on; prior to 2009 a variety of equipment and methods were used (see www.data.boem.gov/PI/PDFImages/ESPIS/5/5243.pdf for further details). The signals transmitted from the sonobuoys were received by one of two antennas, an omnidirectional and a directional (Yagi) antenna. Both antennas were placed in the crow's nest of the vessel with the directional antenna facing astern. The directional antenna was used primarily during transit when the sonobuoy behind the vessel, and the omnidirectional antenna was used for monitoring multiple sonobuoys simultaneously, or when the boat was idling at station. A switch located in the bridge next to the acoustic station was used to alternate between antennas depending on the direction of travel. The signals received by the shipboard antennas were pre-amplified (15dB; PV160VDA, Advanced Receiver Research, Burlington, VT), before being sent via cabling to three G39WSBe WinRadio sonobuoy receivers, then inputted into a MOTU brand Ultralite mk3 multi-channel external soundcard. The soundcard digitized the signal at a sampling rate of 48 kHz. The external soundcard was connected to a laptop computer where the recordings were monitored in real-time and simultaneously recorded to an external hard drive using ISHMAEL (Mellinger 2001) software. Directional bearing information of calls was obtained using DiFAR demultiplexing software and a custom MATLAB interface (Greeneridge Sciences, Inc. and Mark McDonald, Whale Acoustics). A GPS feed into the computer provided the ship's position every minute, as well as the sonobuoy deployment location information, and time. A custom tracking and plotting program implemented in MATLAB (Catherine Berchok, MML) allowed for real-time plotting of the vessel and sonobuoy locations, as well as

bearing and location coordinates of calling whales. Monitoring occurred in real time 24/7, with the majority of sonobuoys deployed every three hours during ship transits. Analysis of sonobuoy data was undertaken primarily during the cruise. An acoustic technician monitored the scrolling spectrograms of the recordings from each sonobuoy aurally as well as visually, and noted the species detected during its deployment, these are included in the data as detected (1), not-detected (0), or possibly detected (2). Further information can be obtained via the following publications: Crance et al. 2017, and Rone et al. 2012.

Process Steps:
- NA

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):
Sonobuoy recordings are reviewed upon returning from the survey. Questionable acoustic detections are analyzed, and if necessary, clips are sent to colleagues for confirmation or identification.

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?
Yes

6.1.1. If metadata are non-existent or non-compliant, please explain:

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/17346

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

Yes

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

National Centers for Environmental Information - Silver Spring, Maryland (NCEI-MD)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:

http://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:0138863

7.3. Data access methods or services offered:

The data are available at NCEI: http://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:0138863

7.4. Approximate delay between data collection and dissemination:

Unknown

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

NCEI-CO

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
National Marine Mammal Laboratory - Seattle, WA

8.3. Approximate delay between data collection and submission to an archive facility:
Unknown

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

IT Security and Contingency Plan for the system establishes procedures and applies to the functions, operations, and resources necessary to recover and restore data as hosted in the Western Regional Support Center in Seattle, Washington, following a disruption.

9. Additional Line Office or Staff Office Questions
Line and Staff Offices may extend this template by inserting additional questions in this section.